

R S Corpora aequalia, vel R corpus majus, S corpus minus.
a Centrum Gravitatis sive an a Libra. Z summa velocitatum utrinque corporis.

$$\begin{array}{l} Re \left\{ \begin{array}{l} \text{veloc. corp.} \\ Se \end{array} \right\} \left\{ \begin{array}{l} R \\ S \end{array} \right\} \left\{ \begin{array}{l} \text{ante impulsum data} \\ \end{array} \right\} \rightarrow \left\{ \begin{array}{l} So \\ Ro \end{array} \right\} \left\{ \begin{array}{l} \text{veloc. corp.} \\ R \end{array} \right\} \left\{ \begin{array}{l} S \\ R \end{array} \right\} \left\{ \begin{array}{l} \text{ante impuls.} \\ \text{data.} \end{array} \right\} \\ OR \left\{ \begin{array}{l} \text{veloc. corp.} \\ OS \end{array} \right\} \left\{ \begin{array}{l} R \\ S \end{array} \right\} \left\{ \begin{array}{l} \text{post impuls. quasita} \\ \end{array} \right\} \rightarrow \left\{ \begin{array}{l} eS \\ eR \end{array} \right\} \left\{ \begin{array}{l} \text{veloc. corp.} \\ eR \end{array} \right\} \left\{ \begin{array}{l} S \\ R \end{array} \right\} \left\{ \begin{array}{l} \text{post impuls.} \\ \text{quasita.} \end{array} \right\} \end{array}$$

[Lege syllabas (quamvis disjunctas) Re Se o Ro S vel Ro So e R in Linea cuiuslibet Casus, & harum quæ scribitur in Schemate more Hebraico, ea indicat motum contrarium motui, quem notat cuiusvis syllabæ scriptio Latina: Syllaba coniuncta quietem Corporis denotat.]

$$\text{Calculus } \begin{array}{c} R+S:S::Z:Ra \\ R+S:R::Z:Sa \end{array} | \begin{array}{c} Ra - 2Ra = 0R \\ 2Sa + Sa = 0S \end{array} | \begin{array}{c} So - 2Sa = eS \\ 2Ra + Ro = eR \end{array}$$

Natura observat regulis Additionis & Subductionis Speciosæ.

An Account of two Books.

I. HISTORIA CÆLESTIS ; Ex Libris & Commentariis M. Stis. Observationum Vicennialium T YCHONIS BRAHE , Dani , Augustæ Vindelic. An. 1666. in Folio.

THe Observations of the Noble *Tycho*, as they were procured and preserv'd by those Three Mighty Emperours, RUDOLPH. II. FERDINAND. II. and III; so they were lately by the Command of his Imperial Majesty LEOPOLD made publick. They are usher'd in by a *Liber Prologomenos*, compendiously representing the Observations made from the time of the very Infancy of Astronomy unto that of its Restoration by the Illustrious *Tycho*; and reduced into 7. Classes, viz.

1. The Babylonian Observations; from A. before Christ 721. unto A. 432.
2. The Grecian; from A. before Christ 432. unto the beginning of the Vulgar Christian Account.
3. The Alexandrian; from A. Christi 1. until A. 827.
4. The Syro-Persian; from A. C. 827. unto 1457.
5. The Norimbergian; from A. C. 1457. unto 1509.
6. The

6. The Boruſian; from A. C. 1509. to 1529.
7. Mixt Observations; from A. C. 1529. to 1582.

In which year (1582) do begin the Observations of *Tycho* (as is affirm'd in this Edition) contain'd in 20 Books, and made in as many years, ending *An. Chr. 1601*, which was the end of *Tycho's* life: Of which time yet there being wanting one year (*viz. 1593*) of the *Brahcan* Observations, that is supply'd by the *Hessian*; and by a Catalogue of the *Fixt Stars*, made and digested by the Authority and Care of that Renowned Prince for Learning and Magnanimity, *William*, Landgrave of *Hessen*, and by the Labours of *Rhotmannus* and *Birgius*.

To all these is added a Continuation of such Astronomical Observations as were made from the time of *Tycho's* death unto *An. 1635*, by *Mastinus* and *Schickardus*.

Having given the Reader this short Account, I find my self obliged to give him notice withall of a Paper publish'd this year, entituled *Specimen Recognitionis nuper editarum Observationum Astronomicarum*, Nob. Viri *Tychonis Brahe*, printed at *Copenhagen* in 4°: wherein are remark'd by *Erasmus Bartolinus* the more considerable Errors in the Observations of *An. 1582*. In this Edition of the *Histor. Calestis*, by comparing it with the *Original*, in the power of the present King of *Denmark*. In which Paper hopes also are given of a more correct Edition, and that of the *Original* it self; together with the Observations both from *An. 1563.* to *An. 1582.* and those of *An. 1593*; all wanting in this Edition of *Ausburgh*.

II. R. P. ANDREÆ TACQUET e Soc. J. Opera Mathematica; with many Schematismes thereto belonging. Antwerp. 1669.
in Fol.

THeſe Works contain,

i. Of *Aſtronomy* 8 Books, wherein the Author hath explain'd the whole Doctrine of that Science in ſuch a gradual Scientifick Order, that now (as himſelf in his own Preface intimates) a Student without the Aid of a Maiter may learn the whole by his own Study, which was formerly not eaſie to attain with the best Instructions.

It may be, the Inquisitive Reader will be desirous to know, what *Systeme of the World* it is, this Author insiſtſon; concerning which we ſhall give you his own words, p. 326.

Hanc controvferſiam (ſc. de Motu Terræ) Joh. B. Ricciolus Almag. l. 9. ea tum eruditione tum copia proſecutus eſt, ut facile omnes in hoc negotio ſupera- verit. Primo, Copernicanorum pro Motu Terræ Argumenta 49. deducit ac deſtruit; pari deinde cura, que contra Terræ Motum afferri ſolent & poſſunt Argumenta, vid. 77. recenſet. Mithi vero, cum nihil hactenus in utram- vis partem adductum videam, quod Probabilitatis metam excedat, his im- morari non eſt arimus. Unum eſt tamen ex omnibus contra Terræ Motu

psius Riccioli Argumentum a Gravium descensu peritum, cui vim ipse Demonstrationis inesse putat; quod examinare hoc loco accuratius opera pretium judicavi.

This with other Arguments he refutes; but declareth p. 330. That, though he knows no Argument, demonstrating the *Rest* of the *Earth* and *Motion* of the *Sun*; yet the Authority of Holy Writ, now seconded by that of the Sacred Congregation of the Cardinals, put it out of doubt.

Concerning the Doctrine of *Motion*, the Author saith thus, p. 15. *Motuum Compositorum Contemplatio digna sane est, qua a Geometris excollatur. De solo motu Volutionis conscripti Tractatum integrum, quem cum libris Cylindricorum & Annularium in lucem edidi. De Motu Projectorum, qui & ipse Compositus est, subtilissimi exstant Libri Galilæi & Torricellii: Et præter hac, alia supersunt innumera, de quibus integra Nova Scientia condi possit.* (Which is accordingly done by the Excellent Dr. *Wallis* in his Book now in the Press.)

For the ease of Calculating an *Eclipse* of the *Sun*, we find, that this Author p. 177. determines, in what part of the Earth such an *Eclipse* shall appear, without the Aid of *Parallax*, and that the *Sun's Parallax*, as to the determination of Celestial Motions, may be safely neglected. And p. 40. he rejects the *Sensible Inequality* of the *Solar* or *Tropical* years; as also p. 60. the *Irregularity* of the *Obliguity* of the *Ecliptick*, of the *Procession* of the *Equinoxes* and *Excentricity*. Pag. 127. he solves that Doubt of *Riccioli*, That it cannot be exactly and evidently known by any Natural Observations made of the Moon or any Star, what the *Parallax* is, without the fore-knowledge of the *Parallax*, or distance from the Earth. And p. 193. avoids these Inconveniences in assigning the Declinations of the Fixed Stars. P. 338. this Author asserts, that the *Comets* and *New Stars*, that have appear'd since 1572, have been far *above* the Moon; and that *Riccioli* about this Controversie seem'd too favourably inclined to *Claramontius*, asserting the contrary.

Concerning the Cause of the *Secondary* light of the Moon before and after the New, to wit, the obscure part of her appearing like kindled glittering Ashes, our Author assigns it to be the *Suns rays* reflected from the bright Hemisphere of the Earth to the darker portion of the Moon, and thence again directly reflected to the Earth destitute of the *Sun's light*. This *Phenomenon* he saith, is learnedly explain'd in *Philos. Optica Nic. Zucchii* from p. 247 to p. 260.

The Author hath not framed nor annex'd any *Tables* to his Book, although he abundantly shews, How they may be computed: referring his Reader to those of *Tycho*, *Reinholdus*, *Longomontanus*, *Kepler*, *Lansberg*, *Wendelinus*, *Bullialdus*, *Petavius*, *Reinerius*, *Riccioli*; to which may be added those of *Duret*, *Billy*, *Street* (which last fixes the *Nodes* and *Aphelia*) and *Wings*, now in the Press.

To the end of these 8 Books are annexed *Proportions* for the 28 Cases of *Spherical*

Spherical Trigonometry. Those that desire to be farther satisfied, may read *Trigonometria Britannica* of *Gellibrand* and *Newton*, the *Idea Trigonometriae* by the Lord Bishop of *Saxum*, Dr. *Seth Ward*; and also *Bonavent. Ca-
valerii Trigonometria*, and his *Directorium Universale Uranometricum*, but especially his *Compendio delle Regole Trigonometriche & Centuria di Pro-
blemi*.

2. Of Practical Geometry 3 Books.

In the First the Author handleth

The Construction of the Tables of *Sines*, *Tangents*, and *Secants*.

The Resolution of Right-lined Triangles.

The Mensuration of the distance of Objects, as well unaccessible as ac-
cessible.

The Heights of Mountains, Towers, Clouds, Rainbowes, the Depths of
Wells and Vallies. He concludes the perpendicular height of the burning
Mountain *Etna* to exceed 5 *Benonian Miles*; of Mount *Caucasus* beyond
the *Caspian-Sea* to be 51. Mount *Athos* of *Greece* 28. *Cafius* of *Syria* 20.
the *Alpes* of *Italy* and *Pic* of *Tenariffe* 10 Miles. The Circumference of
the Earth, the Distances of the Sun, Moon, and Earth.

In the second Book, he handles the Dimension of Plain Surfaces, either Regular or Irregular, and takes the *Ichnography* or Description in Paper, of
any Figure given of the surface of the Earth: Asserts the Possibility of the
Quadrature of the *Circle*; and handles the Transformation of Plain Fi-
gures, to wit, their Addition, Subtraction, Augmentation, Diminution,
Comparison; further the dividing of a Plain Triangle, in a given Reason
by a line passing through a Point any where assigned: This he doth largely
in 16 *Propositions*, because upon it chiefly depends the Division of other
Right-lined Figures; and because he found divers Determinations want-
ing, when the point is given within. Those that are desirous to see this
Analytically done, may find it in *Herigon* with a Construction thereof; as
also a *Geometrick* Construction thereof in *Van Schootens Miscellanea*; and
another most excellent Construction at the end of *Van Ceulen de Circulo &
Adscriptis*.

Afterwards our Author proceeds to the dividing of other Figures, in a
given Reason, or by parallel lines, and sheweth how to apply the whole to
Practice in the Field.

In the third Book the Author first measureth such Solids as are contained
under a Plain Surface. Secondly, such as are contained under a Curved Sur-
face. Thirdly, He measureth the *Mundane Bodies*, as the *Surface* of the
whole Earth; where he is pleased to conclude, that at the Day of Judge-
ment, a less portion of it then *England*, will serve to hold all its Inhabitants,
and their Infants, that ever have been, or in likelihood may be hereafter,
till then, supposing the World should last 10000 years. He measureth also
the Solidity of the Earth, and Ocean; the Magnitude of the Sun, Moon,

and Earth. The Increase, and Diminution, the Transformation and Comparison of divers Solids, and the Mensuration of divers of their Surfaces.

3. Of Opticks 3 Books.

In the first, he handleth the simple and direct Appearances of Objects meaning such appearances as are not liable to Reflection or Refraction; and herein he saith, that passing by slight matters, he onely treats of such as are either new, or of the better esteem; such as are the Properties of the sight, the manner of its perceiving a Distance; and the Place of the Eye being assigned, to find that Height, in which a greater Length or Breadth Shall appear equall to a lesser Length or Breadth, or any assigned Length or Breath shall appear in a given Proportion. He likewise finds the Portion of a Cone or Cylinder, seen according to the Magnitude of the Figure, and Position of the Eye, and explains the Moons Phases.

In the 2d. He handles the Theory and Practice of the Perspective or Scenographick Projection, or Transcription of a given Magnitude into a Plain, which cuts the Optick Pyramid; wherein he explains the Direct appearance, and the Monstrous deformation of an Object, which at a certain place shall appear beautiful.

In the 3d. He treats of the Astronomick Projections of the Spheare, and thence derives the triple Astrolabe, and sheweth their uses, and the Conveniences or Inconveniences of each projection: viz. the Projection on the Plain of the Equator, the Eye being in one of the Poles; or on the Plain of the Colure of the Solstices, the Eye being in one of the Äquinoctial Points; and the Orthographick Projection, by Perpendiculars, falling from the respective Points of the Circles of the Spheare, on the Projecting Plain: Such a Projection, if the Plain be the Meridian, Ptolomy called the Analemma.

If the Eye be in the Zenith or Nadir projecting on the Plain of the Horizon, the Author sheweth, that the Projection will be the same, as if the Eye were in one of the Poles projecting on the Plain of the Equator, onely the names of Circles are changed.

Pag. 205. *Nam Circulus qui in illa referebat Äquatorem, in hac Horizontem representat; & Projecturæ Tropicorum reliquorumq; Äquatori parallelorum in illa, in hac sunt Projecturæ parallelorum Horizonti seu Almicantarath: rursus qui in illa sunt Projecturæ Horizontis, Almicantarath & Verticalium, in hac projecturæ erunt Äquatoris & Parallelorum ejus, ac Meridianorum. Postremo rectæ linea, qua per Centrum Projectionis ductæ, erant projecturæ Meridianorum in illa, in hac erant Verticalium Projecturæ; quare qui illius Projectionis modum probe intellexerit, hanc quoq; nullo negotio perficiet.*

If this had been well observed, there had been no need of Controverting, Whether the Horizontall Projection had been a New Invention: It is as Ancient as Ptolomy, and all the 4 Quadrants of several contrivances published by Mr. John Collins*, are derived from the Western side, or the continuance thereof, admitting but a meer Mutation of the Names of Circles, and a projecting of more Parallels.

4. Of *Catoptricks* 3 Books; in the First of which the Author treats of *Catoptricks or Reflexion*.

In the Second, of the affections of *Plain Glasses* simply, or of many such, placed either in a Parallel or Inclined Position to each other.

In the Third, of *Curved Glasses*, and therein first the chief affections of *Convex Sphærick Glasses*; afterwards of *Concave Sphærick Glasses*: lastly of *Burning Glasses* of several kinds.

The death of the Author prevented him from Writing of the *Diopticks*, which was very far advanced by *Des Chartes*, and hath been further promoted since by *De Beaune*, *Honorato Fabri*, *Manzini*, and in the Century of Optick Problems of *Eschinardus*; and we may hope that ere long the learned Mr. *Barrow* will enrich the World with his Labours of this and other kinds; also Mr. *James Gregorie*, the Author of *Optica Promota*, hath a Treatise of this Subject in good forwardness for the Press.

5. Follows the Authors Treatise of *Military Architecture or Fortification*; in which he hath collected six several ways of *Regular Fortification*, and hath likewise divers ways for *Irregular ones*, when the Scituation of the place so requires; and intersperseth divers questions, and relates some Transactions in the late eminent Sieges of Christendome.

6. Follow his *Annularia & Cylindrica*; the first 4 Books whereof were first publisht in 1651, and are common enough to be had here; which may make the Reader wonder at their being reprinted; especially considering, that though they have deservedly received much applause, yet they have likewise been censur'd for opposing and neglecting other Methods, whereby the Author might have rendred, what he delivers, more universally and briefly. Concerning the first 4 Books, *Ant. Lalovera* in his Book *de Geometr. veterum promota thus*;

Seruenerunt in manus nostras R.P. Tacqueti lib. 4. Cylindricorum & Annularium: Opus censemus absolutissimum, ejusq; Authori, qui primus hacte re suas lucubrationes vulgavit, istam coronam debitam esse agnoscimus:

And Stephen Angelii in his Treatise *de Infinitis Parabolis, deque Infinitis Seruidis, &c.* (printed at Venice 1659.) in the Preface begins thus;

* *These Quadrants, printed, may very conveniently be pasted on Copper-Plates, and varnished; which done, they will be not only very cheap and portable (to be had at John Marks at the Sign of the Golden Ball near Somerset-Houle) but also serviceable enough, being preserv'd by the Varnish from the accidental injuries of Ink and Dirt; and for these very reasons made publick, serving for an Example to introduce the like way for other Mathematical Instruments.*

Publici Juris fecimus elapso anno 1658. libellum quendam, cui titulus, Sexaginta Problemata Geometrica: In hujus calce Appendiculam adjunxi-
mus, in qua occurritur Mario Bettino, Cavaleriana Indivisibilia veluti
Damonas parenti. Paucis vero transactis diebus a modo dicti Libelli impressi-
one, incidimus forte Venetiis in opus Aureum And. Tacquet, CYLINDRICA & ANNULARIA nuncupatum; in quo cum incidemus in
Schol. prop. 12. l. 1. Authorem carpere Indivisibilia invenimus.

Doluimus vehementer (saith Angeli) Opus tanta eruditione refertum non
prius ad manus nostras pervenisse; censura autem in ipso contra Indivisibilia
pronunciata, parum aut nihil nos turbat: Vetera enim continet & non nisi eo-
rum modica, & imbecilliora, que prius ab ipso Cavalerio in Prefat. Geome-
triæ Indivisibilium, & a Guldino in Centro-baryca objiciuntur; quibus satis
superque occurrit ipse Cavalierius.

And Angeli in the Preface of his Treatise *De Infinitorum Spiralium Spati-
orum Mensura* (Venetiis 1660.) having occasion to mention the fruitless
endeavour of Guldin in finding the Center of Gravity of a Spiral Line,
and a Right line equal thereto, saith thus;

P. Guldinus, *Centrobaryca* (Anno 1635. & 1640. edita) Author famo-
sus (at Cavalerianorum Indivisibilium contemptor & irritor, qui dum Indi-
visibilibus irritis, seipsum ridiculum prabuit) altius omnibus volatum sum-
pit, at conatu irrito, & Icari fine, ut ipsem fatetur.

But Guldinus doth not confess himself in an error in opposing Cavalier's
Geometria Indivisibilium, published 1632; but saith, he was very aged, of
an infirme memory, and that he had not (as we may gather) leisure to per-
use it throughly, when he had health, nor health when he had leisure.
The Controverie, and the Reply about it, is exceeding pleasant, and to
be found with other considerable Miscellanies in the *Geometr. Exercitat.*
of Cavalierius printed at Bononia 1647. Which Book if Tacquet had seen
(for he quotes it not) he would probably not have made any such oppo-
sition.

Angeli doth not only answer what is objected by Tacquet, but shews,
what famous Authors he hath on his side, who have derived many excel-
lent Inventions from this Method of Indivisibles, viz. Beauprand, Rocca,
Magiottus, Van Scheten, Rich. White, Bullialdus, Terricellius, who
calls Cavalier's First Book the *Ocean of Indivisibles*, and the *Fountain of In-
ventions*. Of which Doctrine he renders many excellent Examples.

Moreover the same Angeli in the Preface to his said Tract, *De Infinit.
Spatiorum Mensura*, hath these words:

Pro Indivisibilibus est veritas ipsa, stantque illi omnes praeclarissimi Geome-
triæ, quos in Epist. ad Lectorem Operis nostri De Infinitis Parabolis recensui-
mus; quibus nuper ultro se associavit Vinc. Viviani l. 1. De Maximis & Mi-
nimis, monito post Prop. 17. ubi ait, Ut hoc loco, ex adverso indirecta An-
tiquorum via per duplarem positionem, luce clarius patet, quantum facilita-
tis, brevitatis, atque evidenter nanciscatur e nova directaque methodo (relecte
tamcs

tamen cunctaque surpata) acutissimi Cavalerii; per Indivisibilium doctrinam nobis amicissimam.

And when thus carefully to apply it, of that see Lalovera's Elementa Trigonismica Tolose 1651. where more Archimedeo he demonstrates the truth of this Method; which Book if Angelii had seen, he would certainly have quoted it, and admired the Author

For want of this Method, it was, saith Angelii, by way of complaint, of Tacquet, that he omitted some Theorems, which by aid the rest he might easily have found out. See him in his Preface to his Infinite Spirals; but especially at Schol. 3. Prop. 15. l. 2.

*S*i ergo Tacquet receperisset doctrinam Cavalerii, potuisset non solum Cubare portionem Cylindrici Parabolici super quicunque Infinitarum Paraboliarum per Basin Parabolae & Punctum in latere; sed etiam ex iis, que in Exercitat. 4. Cavalerii tradunt ipse & Beaugrand, potuisset Cubare Segmenta portionis cuiuscunque Cylindrici Parabolici respectu planar sectioni maxima parallelis: Imo ex doctrina Cavalerii potuisset etiam Cubare, & portionem Cylindrici super Hyperbola per basin Hyperbolae & Punctum in latere, & segmenta hujus portionis respectu planar sectioni maxima parallelis (supposita tamen Hyperbolæ Quadratura.)

Angelii finds afterwards another deservedly famous Man, viz. Dr. John Wallis, owning and using the Method of *Indivisibles*, and advancing it to admiration in his Arithmetica Infinitorum; who in his Book de Cycloide at Oxford 1659, saith thus, Pa^g. 9.

*S*upponimus enim (quod et facile, si opus est, probabitur) Planum quodvis tantumdem hujusmodi Conversione (seu Rotazione) producere, quantum est quod fit ex eodem Plano in lineam ipsius Centro gravitatis descriptam dulio; quod & de linea quavis five recta five curva, in eo Plano descripta, pariter intelligendum est: Quod quidem enim ipso olim me primum invenisse putaverim, monitus mox eram, nonnihil apud Guldinum existare quod hoc spectet. Id autem si animadvertiscer Tacquetus, dum de Cylindricis & Annularibus acutum Opus conscripsit, non parum illi fuisse adiumento, multaque qua illuc extant, tum Universalius tum contractius forte fuissent edita.

All which is not recited here, to disparage our Author, but to take off the prejudice, which he may beget in his Readers against the Method of *Indivisibles*, which hath been owned by other famous Men, besides those already recited; viz. by Mengolus, who from the Excellencies of this Method; Archimel's Method, and Vieta's Specious Algebra, compos'd his Geometria Speciosa; by Antimo Varby, alias (as 'tis suggested) Hon. Fabri in Tract. De Linea Sinuum & Cycloide; by Pascal, alias Dettonville; by Des Cartes himself Vol. 3. of Letters, who saith, that by it he squared the Cycloid, and lately by the excellent Stifflus, &c. 2. To remove the other prejudice that may be against this Author as defective: for the 5th Book Cylindricorum & Annularium (now printed with the rest) the Prefacer asserts to be first extant in 1659. And because we presume, the rest of these Books are already known and common, and that this hath not formerly been expos'd to sale in England; and because also it supplies and compensates those defects, we think fit to acquaint the Reader with the Argument thereof. The Author divides this Fifth Book into six Parts:

1. In the first he demonstrates (in 6 Lemma's and 9 Propositions) That, if any Plain Surface have a Rotation about its Ax's in any Situation whatsoever, and at any distance whatsoever, or none, it produceth a Round Solid equal to an Upright Solid, whose Base is the begetting Figure, and Height is equal to the Circumference described by its Center of Gravity. (*This Universal Rule was invented by Guldin, and is the Basis of most of his Doctrine; but he could not demonstrate the same, though 'twas much desired.*)

2. In like manner, If any Perimeter have a Rotation about its Axis in any Situation whatsoever, it begets a round Surface, equal to a right Surface, made by the same Perimeter as a Base (which may be evolv'd and made a Plain Surface) whose height is the way or circumference described by its Center of Gravity. This by 5 Lemma's and 10 Propositions.

Theſe being two admirablie Universal Rules in Geometry, the Reader will find the ſame (with many others) demonstrated by Dr. VVallis in his Treaſie De Caculo Centri Gravitatis, which together with his other Tracts, De Motu, Statica, Mechanica, are now at the Preſs in London. The ſame Rules are likewife demonstrated in Geometriae parte Universali Jacobi Gregorii Scoti, Patavii 1665. Of which a competent number of Copies is expreſed here.

The Methods of theſe Learned Men are diſſerent, and good Arguments might be gi-
ven, that they have not communicated nor ſeen the Works of each other.

Guldinus, l. i. c. 12. ſhews a Mechanick way to find the Center of Gravity of a Sur-
face or Curv'd Line, by 2 free ſuspensions, from the points of which, perpendiculares be-
ing drawn, do croſs each other at the Center of Gravity. This we mention, to keep the
Reader from taking the Center of Gravity of a Curv'd Line as ſuch (which is intended
in this 2d Rule) to be the ſame with the Center of Gravity of the Figure thereby termi-
nated in the firſt Rule.

3. Considereſ the Affectioſ of Round Solids, begot from a Parabola, in 10 Propo-
ſitions from Numb. 20. to 29. both inclusive; whereof the 21 and 23 gives the Hoof
required by Angelis, which was formerly cubed by Greg. de S. Vincentio. In the 27th
Prop. he gives the Proportion of the Parabolical Conoid to the Spindle made of the ſame
Parabola by rotation about its Base, to be, As the Base of the Parabola is to $\frac{16}{15}$ of the
Axis; ſhewing, that Guldinus err'd through forgetfulness. In Prop. 29. he delivers, that
the Parabola bears ſuch a proportion to a Circle delibr'd about the Base thereof as a Diam-
eter, As the Axis of the Parabola doth to that Circumference of a Circle, whose Ra-
dius is equal to the diſtance of the Center of Gravity of the Semi-Parabola from the
axis.

4. Contains divers endeavours and manifold new ways towards the obtaining the Qua-
drature of the Circle in 12 Propoſitions.

5. Contains 10 Propoſitions, from 41 to 51; in the 42th whereof he finds a Sphere e-
qual to an Hyperbolical Ring-Solid; whence divers ways are open'd towards the attaining
the Quadrature of the Hyperbola: And he finds a Sphere equal to a Ring made by the
Rotation of a Segment of an Hyperbola, and of the Segment of a Circle thereto annexed,
described about the Base of the Hyperbola as a Chord Line: Then he absolutely cubes cer-
tain Hoofs cut out of an Hyperbolical Cylinder, and thence derives other ways towards the
obtaining the Quadrature of the Hyperbola.

6. Delivers 3 Theorems, ſhewing the proportion between an Hyperbola and a Circle:
which are conceived to be wholly new.

But theſe Theorems ſuppoſe the Quadrature of both Figures known, viz. That of a
Circle, in requiring the length of the Circumference of a Circle, delibr'd by the Center
of Gravity of an Hyperbola; which Center cannot be found, without giving the Qua-
drature or Area of the Hyperbola: which hath been moft happily perform'd by M. Mer-
cator in his Logarithmo-Technia and further advanc'd by Dr. Wallis in N. 38. of theſe
Transactions; and by M. Gregorii also further promoted and otherwise perform'd in his
Excitationes Geometricæ, where he ſhews, the ſame Methods and Approaches to be
likewife applicable to the Circle.

What we have ſaid, being an Account of one of the moft conſiderable Volumes of Ma-
thematicks extant, we hope we may be the better excused for prolixity. This Author for-
merly publish'd the Elements of Plain and Solid Geometry in 8°, and an Arithmetick
in 8°, wherein he promised a Treatife of Algebra.

*Errat. P. 865. l. 24. r. m P C; p. 866. l. 3. del. finiftrō ſum; ibid. l. 18. r. Gravi-
tationem; ib. l. 24. r. progreſſivo; ib. l. 22. r. fit 5, p. 867. l. 22. r. improprie-*

 P. 863. Insert immediately before theſe words [Lege syllabas, Re-
gnia. Re, Se, faciunt oR, oS: Ro, So faciunt eS, eR.

In the SAVOY,

Printed by T. N. for John Martyn, Printer to the Royal Society, and are
to be fold at the Bell a little without Temple-Bar, 1668.